DOCUMENT RESUME

ED 085 134 RC 007 477

AUTHOR	Clark, Juan M.
TITLE	Social Patterns of Rural Family Income.
PUB DATE	69
NOTE	86p.; Master's Thesis, University of Florida, Gainesville
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Agriculture; Economic Factors; *Family Income; Human Resources; *Low Income Groups; Migration Patterns; *Rural Family; *Social Factors; Southern States; *Statistical Analysis

ABSTRACT

The objectives of this study were to develop and analyze social patterns of rural family income in Jackson County, Florida, formulating criteria useful for upgrading living levels for families under different environmental conditions. Datawere collected by interview-type field schedules from all families within selected clusters of households. The schedules were reviewed item by item to locate attributes likely to be significant and those attributes were subjected to statistical significance tests. All items retained were given score values and classified into 3 categories: biographical, economic, and environmental. This scale was the basis for analyzing social patterns of income both by tabular and regression analyses. Major findings were that families could be placed in 7 separate patterns and that there was a consistent change in variable relationships throughout the patterns. The study suggested that the family income patterns may be used to conceptualize the profile of rural poverty so that programs can be directed to specific people for specific remedial purposes. (PS)

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SOCIAL PATTERNS OF RURAL FAMILY INCOME

By
JUAN M. CLARK

A THESIS PRESENTED TO THE GRADUATE COUNCIL OF
THE UNIVERSITY OF FLORIDA
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER OF SCIENCE IN AGRICULTURE

UNIVERSITY OF FLORIDA
1969

RC007422

TO

MY FAMILY

ACKNOWLEDGEMENTS

The author wishes to express his appreciation to all those who contributed to the completion of this study. Special thanks are extended to Professor D. E. Alleger, Special Supervisory Committee Chairman, for his helpful guidance and untiring efforts in guiding the formulation, preparation, and completion of this thesis.

Grateful acknowledgement is also extended Mr. D. W. Parvin, Jr., graduate student, for his invaluable assistance in programming the computer analyses, to Dr. Lester Myers for his statistical interpretations and review of same, and to Dr. K. R. Tefertiller, Chairman, Department of Agricultural Economics, for providing a graduate assistantship.

Appreciation is also due to Dr. H. B. Clark and Dr. S. Iutaka, members of the Special Supervisory Committee, for reviewing the manuscript and appraising its content.

An expression of appreciation is due Mrs. Carol Hedick for typing the preliminary draft and to Mrs. Diane Miller for typing the final manuscript.

I extend my most sincere appreciation to my wife Clara for her understanding and cooperation during my graduate program.

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CHAPTER I

INTRODUCTION

Concepts and values attributable to families in poverty differ from those characterizing the middle-income and the more affluent classes of American society, according to published research findings. The basic theme of this thesis is that rural families are grouped in patterns of pluralistic behavior according to customary levels of family income.[1] The importance of this situation is indisputable in relation to the millions concerned, the land and other resources at their command, and the number of human migrants they supply to urban centers annually. The need for a new approach to the southern rural poverty phenomenon, such as is undertaken in this thesis, is clearly warranted because of the vast and diverse Federal anti-poverty programs now underway.

The Problematic Situation

There is much homogeneity as well as diversity in the social and economic aspects of rural poverty in the South. Consequently, a study made in one area should have relevance for other areas. In the United States as a whole, one in every four persons in rural areas is poor with high proportions of them near destitution, according to criteria

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[1]The basic data for this study were drawn from the Florida Agricultural Experiment Station, Project No. 1244, Human Resource Development and Decision-Making, which contributes to the S-61 Regional Project, Human Resource Development and Mobility in the Rural South.

commonly used to measure poverty.[2] This is nearly double the ratio of poverty reported for the American cities. In 1865, close to 14 million of the nation's poor lived in rural areas, but only 29 percent of the total population was rural. In Florida, the rural poor are most heavily concentrated in the northern tier counties, as they have been for some decades. Similar situations are commonly found in nearby counties of Alabama and Georgia. Level of living indexes are illustrative (Table 1).

Data for this study were collected in Jackson County, which borders upon both Alabama and Georgia.

It has frequently been inferred that rural low-income areas have in their origin and continuance a historical tradition.[3] Suffice it to relate here, the ameliorative influences which usually follow advances in technological developments, and which have swept the United States, have not been of a nature or massive enough to eradicate chronic poverty in rural areas of the South. The problem of how to innovate in ways that will substantially raise personal incomes of low-income people remains. This thesis takes an exploratory approach to examine this subject. It presents a delineation of social patterns of family income based on biographical, economic and environmental attributes.[4] It is

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[2] The People Left Behind, 1967 (Washington, D.C., The President's National Advisory Commission on Rural Poverty), p. 3.

[3] Daniel E. Alleger, Continuum of Purpose Among Low-Income Farmers (mimeographed), a paper presented at the Association of Southern Agricultural Workers (Jackson, Mississippi, February 1961).

[4] Harold F. Kaufman and John E. Dunkelberger, in Classifying Families in Low-Income Rural Areas (Brazil: Universidade de Sao Paulo, 1960), p. 180, stated, "A major end in research is to discover those classifications which are most predictive -- that is, related most highly to the largest number of significant factors or characteristics relevant to the problem at hand."

Table 1.--Farm Operator Level of Living Indexes for Jackson County, Florida, and Counties Contiguous Thereto, 1950, 1959, and 1964, and Percentage Increases, 1950-1964.

State and County	Index, Florida 1964 = 100			Percentage Change
	1950	1959	1964	1950-1964
Florida:	36	78	103	186
Calhoun	18	52	71	294
Gadsden	30	62	95	217
Holmes	14	54	70	400
Jackson	15	55	74	392
Washington	17	53	79	365
Alabama:	17	50	71	318
Geneva	17	51	77	353
Houston	21	54	81	286
Georgia:	24	63	85	254
Seminole[a]	22	69	93	323

[a]Index computed for Miller and Seminole counties combined.

Source: Farm Operator Level of Living Indexes for Counties of the United States, 1950, 1959, and 1964, 1967 (Washington, D.C., ERS, USDA), Statistical Bull., No. 406.

believed a knowledge of social patterns of family income will facilitate the identification and refinement of significant relationships which have been obscured in many other classifications.

The Survey Area

The location chosen to study decision-making processes in 1966 was Jackson County (Figure 1). The county lies in the general farming area of northwestern Florida and its county seat, Marianna, is 65 miles to the west of Tallahassee. Agriculture was well-developed in the county prior to the Civil War, and shortly after the termination of hostilities several patterns of sharecropping became common.[5] It is only within the last 15 years that share tenants have largely disappeared from the area.

The topography of the county is flat to gently rolling. Sandy upland soils are found in both its eastern and western extremities, red loams in the greater part of its central area, and pockets of deep dry sand in its southwestern corner. The production and harvesting of food crops, fibers and timber continue to be its main extractive industries.

Since World War II considerable changes have occurred in both the county's population profile and its occupational structure. The total population increased in relatively limited numbers from 1940 to 1960, or from 34,428 to 36,208 inhabitants, but the percentage of nonwhites dropped from 36 to 31 percent (Figure 1). The residential changes have been largely toward rural residential rather than urban. In 1960, the population was 80.2 percent rural, in spite of occupational changes.

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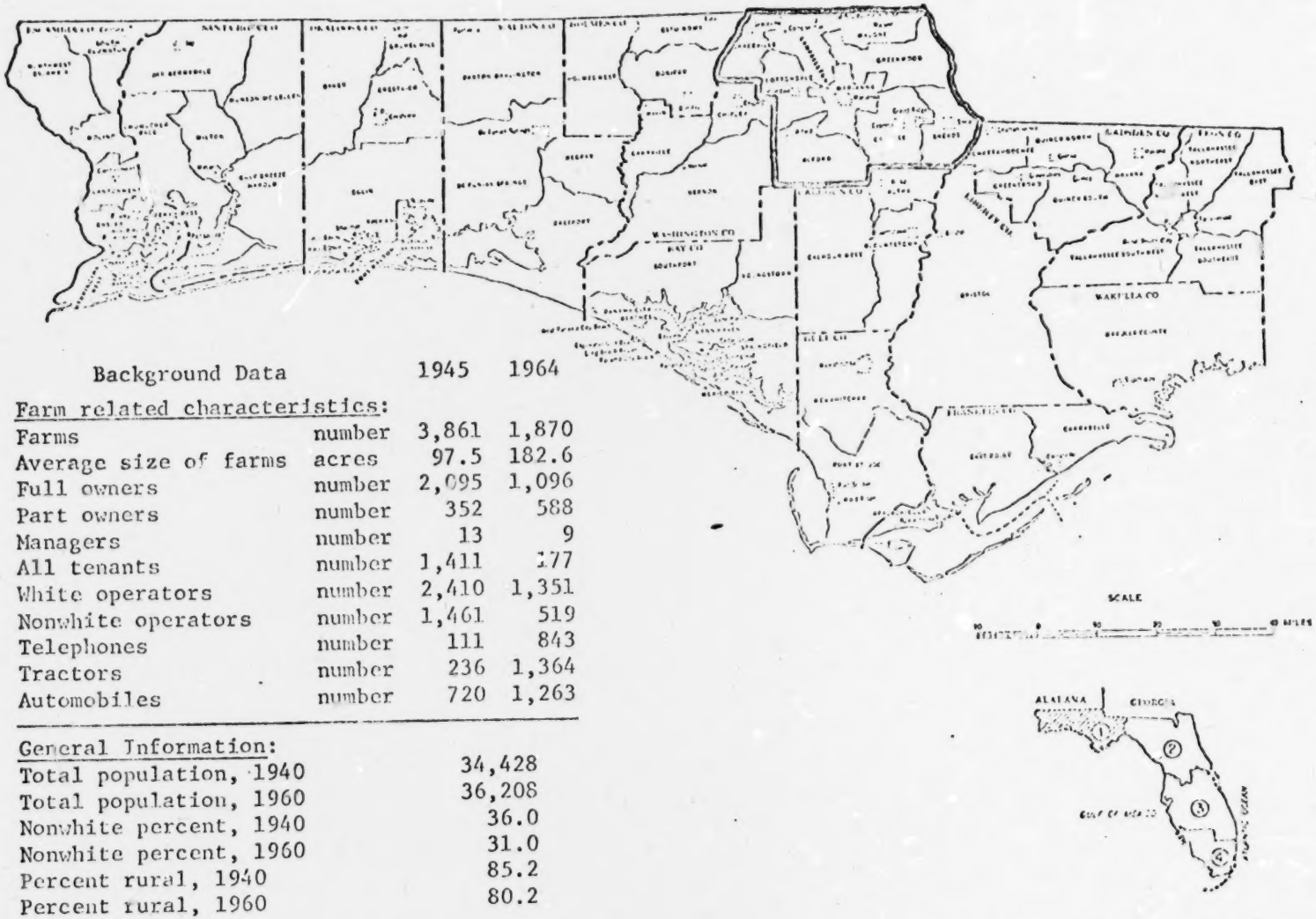
[5]Daniel E. Alleger and Max M. Tharp, Current Farm Leasing Practices in Florida, 1951 (Gainesville: Fla. Agr. Exp. Stat.), SCS Bull. No. 13.



Background Data		1945	1964
Farm related characteristics:			
Farms	number	3,861	1,870
Average size of farms	acres	97.5	182.6
Full owners	number	2,095	1,096
Part owners	number	352	588
Managers	number	13	9
All tenants	number	1,411	177
White operators	number	2,410	1,351
Nonwhite operators	number	1,461	519
Telephones	number	111	843
Tractors	number	236	1,364
Automobiles	number	720	1,263

General Information:	
Total population, 1940	34,428
Total population, 1960	36,208
Nonwhite percent, 1940	36.0
Nonwhite percent, 1960	31.0
Percent rural, 1940	85.2
Percent rural, 1960	80.2

Figure 1.--The Geographical Location of Jackson County, With Exhibit of Relevant Background Data.

In 1940, nearly 63 percent of the males employed in the labor force was engaged in some form of agricultural employment; in 1960, the percentage was approximately 24. Large numbers of former agricultural workers had found employment as operatives, craftsmen, professionals, clerical and sales workers and as service and kindred workers, as noted by the 1960 occupational structure. Between 1940 and 1960 the total number of employed male non-agricultural workers increased from around 2,700 to 5,900, and the number of male agricultural workers dropped from around 4,500 to 1,900. Presumably, such large proportional shifts involved considerable decision-making on the part of those concerned. Yet, in spite of these changes, the country population continues to be positioned in the commonly regarded "poverty" category.

In 1960, well above 50 percent of families in the county was enumerated as receiving less than $3,000 in annual income, the top level of which is considered to be at the poverty borderline.

Objectives

It is the hypothesis of this study that rural people have distinctive demographic and socioeconomic income correlates that can be delineated into social patterns of family income. A second hypothesis, which grows out of the first, is that the use of the knowledge of such patterns would facilitate family uplift and community development.

The objectives of this study are to develop and analyze social patterns of rural family income in Jackson County, Florida, in order to formulate criteria useful for upgrading levels of living for families who live under different environmental conditions.

The need for an understanding of social patterns of family income is essential for a number of reasons. Among these are (1) the identification and understanding of the subculture of poverty, (2) the need for the homogeneous grouping of families in order to raise the level of precision of analysis related to family decision-making, and (3) to develop academic and practical criteria for use of Federal, state and county agencies for improving the content of rural life.

Method of Study

Interview-type field schedules were used to accumulate research data. They consisted of a short identification schedule taken from all families living within selected clusters of households (Appendix, page 68). All data gathered were edited, coded, and placed on IBM cards for computer analyses.

The Sampling Design

The universe for the 1966 study in Florida was Jackson County. This county was selected because of its relative socioeconomic comparability to counties included in the S-61 regional resurvey for the states of Alabama, Mississippi, North Carolina, and Tennessee, also initiated in 1966. These four states conducted resurveys of householders interviewed in an earlier regional project (S-44).[6] Jackson County was not included in the original survey (S-44), but the 1966

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[6]The original sample was drawn for the Southern Regional Cooperative Research Project, S-44. For references, see Carolyn A. Morgan and Virlyn A. Boyd, Annotated Bibliography of Publications and Reports, Project S-44, 1966 (Clemson University, Clemson, S.C.).

Florida in-depth interview schedule was so designed that coding of the research material gathered concurrently in all five states could be substantially combined.

In Florida, state highway maps were used to locate householders in the survey. Dwelling units, highways, roadways, rivers and creeks, and other topographic features were exhibited on these maps. Only the population in the open country was interviewed. This population was randomly selected in the matter described below.

On maps, scaled one inch to one mile, all open country and rural homes accessible by road were delineated into clusters of five homes each. Each delineated cluster was numbered in a consecutive order from one to 705. The first number was assigned to the cluster located in the southeast section of the northeast township (S34, T7N, R8W), and consecutively thereafter in a serpentine fashion within the township moving from south to north. This was followed by dropping to the southwestern section of the next lower township (S34, T6N, R13W) to begin numbering from west to east. Thus, within the townships the numbering sequence was south to north and reverse, and within the county from east to west and reverse.

The first cluster drawn from the sample for the field survey was 704, selected from a book of random numbers. The interval between the first and next and all following numbers was 14. The random number for the first selection of the alternate sample was 645, and for the second alternate sample 383, the intervals between numbers being 35. Fifty-one clusters were drawn from these groupings for the original sample (Figure 2), and 20 clusters each for both a first and second alternate

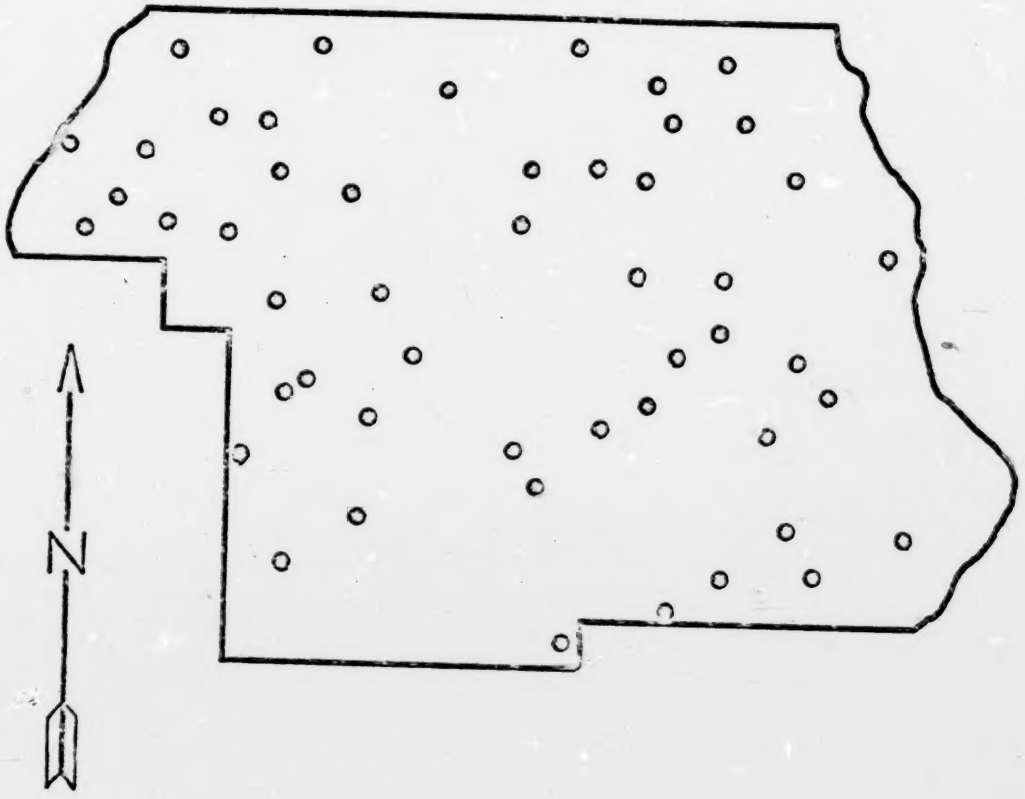

Figure 2.--Location of Household Cluster Surveyed, 1966.

sample. Altogether 321 identification records were secured, as were 75 male family head and 75 homemaker in-depth responses.

Analytical Procedures

Data recorded on the identification schedule are the principal sources of material subjected to analyses. Considerable background data were synthesized to gain an overview of the population, income, and environmental situations under which the respondents lived.[7] This proved useful in interpreting the analysis.

Having determined from the many informational sources that social patterns of family income seemed related to many situations observed, even though never explicitly mentioned, the immediate task was to locate and scrutinize those attributes which seemed most likely to satisfy the requirements of the thesis objective. A first check was to review the research schedule item by item to locate attributes likely to be of significance.

Once the attributes were listed they were subjected to tests of statistical significance. Thereafter, each item or attribute retained was assigned both a high and a low score value, as described in Chapter II. All items which were given score values were then classified into three categories, namely, biographical, economic, and environmental. The immediate result was the construction of a scale, herein termed an "Income Pattern Scale." This scale was the basis for analyzing social patterns of income, both by tabular and regression analyses.

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[7]U.S. Census materials, unpublished data in the archives of the Florida Agricultural Experiment Station, and personal knowledge of station research specialists.

CHAPTER II

SOCIAL PATTERNS OF RURAL FAMILY INCOME

Social patterns are traits, acts, or other observable features that characterize an individual or groups of individuals. They may be unique in each individual, but are modifiable through environmental conditioning. Multi-individual or pluralistic behavior may be conceptualized as orderly sequences that characterize plural numbers of human beings. This trait has been aptly described by Haring and Johnson:

> Throughout life the mental activity of any human being, consciously or unconsciously, is occupied with the achievement of conceptual order. Such an order reflects at every point his total life experience, determines and in turn is determined by his personal logic. He fits each new percept into the conceptual whole which is his view of life, and which is an aspect of his total personality.[1]

A view that some writers have expressed is that chronic rural poverty as it is transmitted from one generation to another is a subculture of American society and reflects the total life experiences of the individuals involved. As a subculture it transcends local, regional and racial differences. An assumption proposed herein is that families who normally live at different income levels react differently to the economic and social forces to which they are exposed, and that

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[1]Douglas G. Haring and Mary E. Johnson, Order and Possibility in Social Life, (New York: Richard R. Smith, 1940), p. 437.

those who live at given income levels tend to exhibit similarities in attitude and behavioral patterns.

This study of social patterns of family incomes is, in a large measure, a classification of significant elements associated with family living at four rather homogeneous income levels.[2] The need for greater definition in socio-economic research is recognized by social scientists, but all too often end-goals are indices only.[3] In this study the indices developed are tools, and not end-goals in themselves.

Since World War II the occupational structure in most rural counties of the South has become increasingly non-agricultural. This has been especially true of low-income areas of western Florida.[4] As a result, governmental concern is increased at all levels in matters relating to farm and nonfarm segments of rural populations. Legislative appropriations associated with the number of farms have, in consequence, lost much of their historical significance.

Social Pattern Components

An acceptable methodology was employed to determine the variable

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[2]Because of the nature of data available in the Florida AES Project 1244 survey, the attributes tested are those recorded during field interviews. The writer recognizes the probability of other existing attributes which he has had no opportunity to explore.

[3]Charles H. Coates and Alvin L. Bertrand, "A Simplified Statistical Methodology for Developing Multi-Measure Indices as Research Tools," Rural Sociology, Vol. 20 (June 1955), p. 132.

[4]Daniel E. Alleger, Rural Areas in Transition, 1964 (Gainesville, Fla. Agr. Exp. Stat.), Bull. 671, pp. 11-12.

components of the income pattern scale.[5] In terms of pattern analytics the theoretical concept of the scale may be envisioned as having multiple cause and effect relationships, the end product of which (score value) was used as a dependent variable in multiple linear analyses (Figure 3). In this study biographical traits (V 2) are perceived as coexisting in orderly arrangements, as are the economic (V 1) and environmental components (V 3). Collectively, they symbolize an action system or pattern wherein each grouping of components has interacting relationships one with another, and in which the matrix of all the components (P) determines differential patterns of social situations, or behavior phenomena (O). The three V sets of variables as they are related to levels of family income lead to a synthesis of composite patterns which takes into consideration the uniqueness of cultural traits in each pattern.

Biographic attributes.--Data of a biographical nature which were incorporated into the income pattern scale included sex, marital status, ability to work, unused vocational skill, age and education of family head. The discussion which follows relates to 300 families interviewed in 1966. Twenty-one other families were excluded because of deficiencies in data.

Most heads of families were males (83.0%), of whom 94.4 percent were married (Table 2), the others being divorcees, widowers and bachelors. A quite different picture emerged when the female heads

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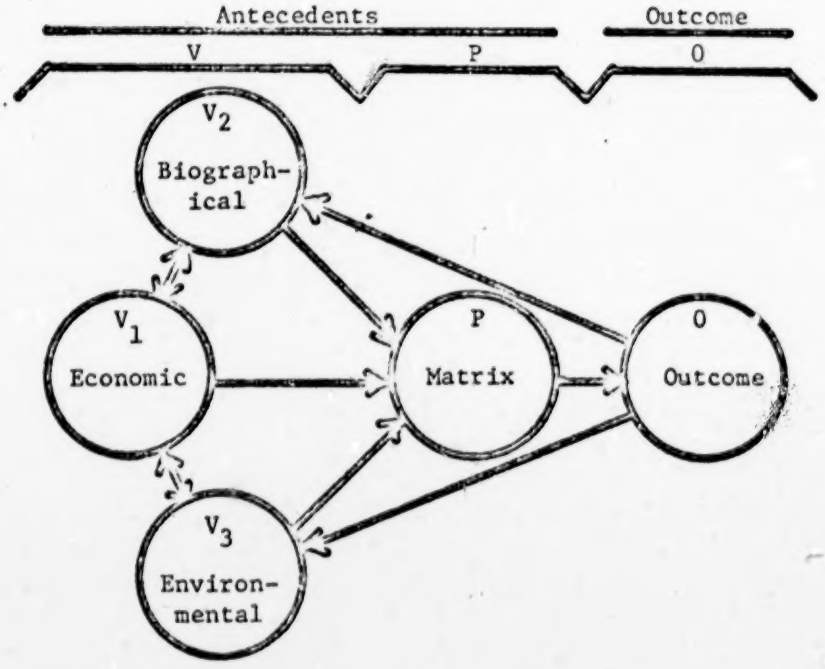
[5]The method used was an adaptation of a construction of a level of living scale. For details see William H. Sewell, The Construction and Standardization of a Scale for the Measurement of the Socio-Economic Status of Oklahoma Farm Families, 1940 (Stillwater: Okla. Agr. Exp. Stat.) Tech. Bull. 9.



Source: Adapted from M. E. Wirth, Pattern Analytics, 1964 (Michigan; Agr. Exp. Stat.), Bull. Reprint, Vol. 47, No. 2.

Figure 3.--A Schematic Representation of the Components (V), the Whole Set or Mix of Variables Which Bear Upon the Social and Economic Conditioning of Families (P), and the Outcome (O) or Differential Sets of Social Patterns of Income Which These Components and Mix Generate.

Table 2.--Selected Biographical, Economic, and Environmental Attributes, 300 Families, Jackson County, Florida, 1966.

Attributes: Heads of Families	Males N=250	Females N=285
BIOGRAPHIC	(%)	(%)
Sex[a]	83.0	16.7
Married	94.4	82.5
Fully able to work	74.4	87.7
Unused vocational skill	12.4	b/
Age of heads (including homemakers):		
Up to 34 years	18.3	21.8
35 to 44 years	14.0	17.6
45 to 64 years	47.0	41.2
65 and over	20.7	19.4
Education of heads:		
None to 4 years	37.5	52.4
5 to 8 years	39.9	35.6
9 years and over	22.6	12.0
ECONOMIC		
North-Hatt prestige ratings	c/	c/
Occupational change 1961-1966	24.2	15.4
ENVIRONMENTAL		(%)
Change of residence, 1961-1966		24.7
Construction of home, block or brick		12.5
Home fronted on paved road		35.9
Distribution of families by size:		
One head only in family		11.2
2 persons only in family		29.2
3 or more persons in family		59.6

[a]Includes single, married and widowed persons.

[b]Not ascertained.

[c]See discussion under economic attributes.

of single-head families were viewed, since nearly three-fourths of them were widows (37 of 51).

In respect to availability to work, sharp contrasts were observed. A larger proportion of females than males was recorded as able to work. Also, the mean educational level of the females was substantially higher than that of the males.

A review of the age distribution of both male and female heads indicated that the average male was somewhat older than the average female. Most of the male heads reported in 1966 that they did not possess any unused skills that they could employ to greater economic advantage.

Economic attributes.--Data that proved to be of economic relevance were the employment changes of male heads (occupational change 1961-66) and prestige ratings as measured by the North-Hatt scale, the total scores for which ranged from a low of 33 to a high of 93. Over 75 percent of the male heads indicated no change in occupation during the 1961-66 period.

There is a notion implied in the North-Hatt scale that the functional importance of occupations in two diverse environmental situations should be different. A simplification of a theory projected by Hatt, one of the designers of the North-Hatt scale, is that (1) differential positions appear in many different social structures, (2) the rewards of these positions are of various types, (3) the combination of all rewards attached to any position constitutes its prestige, and (4) the total societal position is a summation of prestige, according to

acknowledged social esteem and goal fulfillment.[6] Thus, the North-Hatt scale should be related to economic as well as social attributes.

Environmental attributes.--The environmental items of statistical significance were changes in place of residence between 1961 and 1966, the type of construction of the house lived in, the type of access road on which the home fronted, and the total number of persons per household in 1966.

The degree of mobility, or change of residence, experienced by the respondents averaged about 25 percent over five years. Approximately 36 percent of the families reported direct access to a hard surfaced road, and around 29 percent lived in unpainted frame houses, 56 percent in painted frame houses, and the remainder in homes of blocks or bricks or unspecified. Most of the household units consisted of two or more persons, the median being close to three persons per household.

Item Validation

Reliability and validity are essential property characteristics of a scale which measures attitudes, social-economic status, or other social and economic phenomena. To be reliable a scale must yield consistent results, and to be valid it must measure that which it purports to measure.[7] One of the major considerations is to determine what

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[6]Paul K. Hatt, "Occupation and Social Stratification," American Journal of Sociology, Vol. LV (May, 1950), p. 533.

[7]Marvin E. Shaw and Jack M. Wright, Scales for the Measurement of Attitudes (New York: McGraw-Hill, 1967), pp. 16-20; Margaret Jarman

items should properly be placed in a given scale. To be meaningful, each item must be entered in such a way that a respondent can be said either to be a possessor or a nonpossessor, or that he can affiliate himself either on a given side or its opposite. In this study, the percentage of individuals that checked at a given possession on a particular item was subjected to the critical ratio (CR) method of testing, which is the significance of difference between two percentages.[8] As such it is a "t" test, or the percentage difference divided by its standard error, as in formula below:

$$CR = \frac{P_1 - P_2}{\sqrt{\frac{P_1 Q_1}{N_1} + \frac{P_2 Q_2}{N_2}}}$$

The critical ratio test is much simpler to administer than correlational techniques. Likert has observed that the criterion of internal consistency (CR) and the results from item analysis yield comparable results, hence the CR is suggested.[9] In addition, T. L. Kelley demonstrated that the highest and lowest 27 percent of an array are the optimum groups for use in item discrimination.[10] Because of

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Hagood, Statistics for Sociologists (New York: Holt, Rinehart and Winston, 1960), pp. 140-141; William H. Sewell, op. cit., pp. 47-50.

[8]Mary Jordan Harris, Review of Scale and Item Analysis and their Application to Level of Living Scale in North Carolina, 1951 (Raleigh: N. C. Agr. Exp. Stat.) Progress Report Rs-13, p. 17.

[9]Rensis Likert, A Technique for the Measurement of Attitudes (New York: Archives of Psychology, 1932), p. 50.

[10]N. M. Downie and R. W. Heath, Basic Statistical Methods (New York: Harper and Brothers, 1959), p. 203.

the vast amount of research that has been given to item analyses over the past several decades, and because of the demonstrated utility of the CR method,[11] the latter was used for selecting most of the items to be included in the income pattern scale, herein developed.

The initial step in the development of the scale was to secure a "print out" of all data included in the short or identification schedule of the Jackson County study. The exhibit obtained was an array from the lowest to the highest family income reported by respondents in 1966. The next step was to determine which items were either biographic, economic, or environmental. Following this, the percentage differences for each item in the lower and upper 27 percent (82 items each) were calculated, that is "p" for possession and "q" for non-possession. Those which yielded a critical ratio of 2.00 or above were considered to have great discriminating power and were retained for scale construction (Table 2).[12]

Construction of Income Pattern Scale

Thirteen items which possessed sharp diagnostic capacity were retained for the income pattern scale to which were added the weighted prestige ratings developed by North and Hatt [13] Three items, age,

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[11] William H. Sewell, op. cit., pp. 30-31.

[12] Example: Given the obtained difference between two measures and the standard error of the difference, a critical ratio of 2.00 means that the chances are 98 in 100 that the obtained difference is significant.

[13] Ibid., Table 2.

Table 3.--Number and Percentage of Families Possessing Items or Characteristics in Both Upper and Lower 27 Percent of an Array of Families According to Family Income, and Applicable Critical Ratios

Item	Lower 27 Percent		Upper 27 Percent		Critical Ratio
	No.	%	No.	%	
BIOGRAPHIC					
Sex of head of household:					
Male	43	.5375	80	.9840	7.78
Female	36	.4500	1	.0121	7.75
Marital status:					
Male head, married	37	.4510	80	.9752	9.13
Female,[a] married	38	.4632	79	.9630	8.57
Fully able to work:					
Male head	18	.2194	79	.9630	15.20
Female[a]	50	.6095	79	.9630	6.16
Unused vocational skill:					
Male	1	.0121	16	.1950	4.09
Age of male head:					
Up to 34 years	2	.0243	20	.2438	4.89
35 to 44 years	2	.0243	19	.2316	3.79
45 to 54 years	6	.0731	27	.3291	4.39
55 to 64 years	16	.1950	10	.1219	1.29
65 years and over	20	.2438	5	.0609	3.46
Age of female:[a]					
Up to 34 years	4	.0487	25	.3047	6.26
35 to 44 years	5	.0609	22	.2681	3.85
45 to 54 years	11	.1340	26	.3169	2.89
55 to 64 years	18	.2174	5	.0609	3.11
65 years and over	35	.4266	2	.0243	7.24
Education of male head:					
9 years and over	1	.0121	53	.6460	11.98
5 to 8 years	15	.1878	22	.2681	1.33
0 to 4 years	29	.3535	2	.0243	6.12
Education of female:[a]					
9 years and over	10	.1219	65	.7923	11.68
5 to 8 years	42	.5119	13	.1584	5.21
0 to 4 years	18	.2194	2	.0243	4.06

Table 3.--(cont)

	Lower 27 Percent		Upper 27 Percent		Critical Ratio
	No.	%	No.	%	
ECONOMIC					
North-Hatt prestige: ratings, male[b]					
Occupational change: Male, 1961-1966	26	.3169	56	.6826	5.07
ENVIRONMENTAL					
Family changed residence, 1961-1966	72	.8776	51	.6216	14.00
Block or brick home	3	.0365	23	.2803	4.61
Home fronts on paved road	21	.2559	42	.5119	4.68
Persons in household:					
3 or more	28	.3413	58	.7010	6.02
2 persons	24	.2925	19	.2316	0.90
1 person	28	.3413	1	.0121	5.07

[a]Female head or homemaker.

[b]Cecil C. North and Paul K. Hatt, "Jobs and Occupations; A Popular Evaluation," Opinion News (September 1, 1947), pp. 3-13.

education and prestige ratings, required graduated answers. Six items were biographical, two economic, and four environmental.

The Weighting of Items

Subsequent to determining the items that were to become part of the scale, the task of assigning weights to each item then presented itself. Several decades ago four methods of weight assigning were compared in one study. They were (1) *a priori* assignment of weights, (2) frequency of occurrence of given items, (3) degree of probability of relevance by use of critical ratios, and (4) successive approximations in which *a priori* weights were successively revised. Through experimentation, all of these methods were found to give essentially the same results.[14] Intercorrelations (Pearsonian r) ranged from 94 to 96. This implied that reasoned judgement in assigning weights was no more in error than use of weights determined by involved statistical methods. But in order to eliminate any doubt as to the ability of the scale in this study to measure that which it was intended to measure, weights for individual items for the income pattern scale were determined by the sigma method of scoring.

The sigma method postulates that important items which occur rarely should receive the highest score values.[15] The intent of the

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[14]Howard R. Cottam, Measurement of Housing and Attitudes Toward Housing in Rural Pennsylvania, 1942 (The Pennsylvania State College), Paper No. 1149.

[15]John C. Belcher and Emmit F. Sharp, A Short Method for Measuring Farm Family Level of Living, 1952 (Okla. Agr. Exp. Stat.) Tech. Bull. T-46.

use of the income pattern scale was to utilize those items which were closely related to and correlated with the largest family incomes. Consequently, to each and every item a weight was so assigned that it differentiated in the direction of the highest family income. A basic assumption which underlay this methodology was that each item was normally distributed. To quote William H. Sewell:

> When the possession of an item is regarded as desirable there is the assumption that possession deviates on the positive side of the mean of the whole distribution with 100 percent as its termination point. On the other hand, nonpossession of an item deviates in a negative direction from the means of the whole distribution with the 50th percentile as its termination point. Furthermore, it posits that the most typical figure for percentage of either possession or nonpossession is one-half the observed percentage frequency.[16]

Weights were assigned by two methods of determination. One was applied to items of true-false or possession-nonpossession type, and the other to cumulative percentages. The item "sex" will serve as an illustration of the first, and age classification of the second. Of 302 families subjected to this analysis, 82.5 percent reported male heads, and 17.5 percent no male head. This was a simple yes and no fact. Since the male heads were more closely related to high family incomes than female heads, the greatest weight was assigned to the male head. It was calculated in this manner:

$$100 - \frac{82.5}{2} = 58.7$$

The distance of 58.7 percent equals +0.587 sigmas. Then, taking the 50th percentile as the beginning point, the sigma value of +0.587 was

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[16]Sewell, op. cit., p. 43.

read from a table of values of the normal probability integral.[17] In this case the sigma score was +0.22, which would be the high value. To obtain the low value for this item the frequency for nonpossession, or 17.5, was used. This percentage, divided by two, yielded 8.75, which represented .0875 sigmas. Reading from the percentile which terminated with 50, a sigma score of -1.36 was obtained. As is apparent, sigma scores yield negative as well as positive values. To help eliminate calculations which involve negative values, a constant of 2.36 was added to all sigma scores and then rounded off to the nearest whole number. Thus, the score value for a male head of household became three, (2.35 + 0.22), and one for a female head (2.26 - 1.36). This procedure was followed for all items.

For the graduated items, frequency distributions were used, as illustrated below for 250 male heads:

Table 4.--Exhibit of Score Values for Graduated Items.

Age Classes	Percentage Frequency	Cumulative Percentage Frequency	Sigma Values	Score Values[a]
Up to 34 years	18.0	100.0	+1.34	4
35 to 44 years	14.4	82.0	+0.38	3
45 to 64 years	45.6	47.6	-0.38	2
65 years and over	22.0	22.0	-1.23	1

[a]Sigma values to which the constant +2.36 was added.

The cumulative percentage frequency distribution of the item was determined. Also, the end of each successive truncated section was

[17]Downie and Heath, op. cit., pp. 257-264.

Table 5.--Income Pattern Scale, Jackson County, Florida, 1966.

Item	Item Value				Score Value
	Male		Female		
	High	Low	High	Low	
BIOGRAPHIC					
Head of household	3	-	1	-	
Married	2	1	2	1	
Able to work	3	1	3	1	
Vocational skill, unused	4	2	4	2	
Age: (Check one)					
up to 34 years	4	-	4	-	
35 to 44 years	3	-	4	-	
45 to 64 years	2	-	3	-	
65 years and over	1	-	2	-	
Education: (Check one)					
9 years and over	3	-	4	-	
5 to 8 years	2	-	2	-	
0 to 4 years	1	-	1	-	
ECONOMIC (Check one)					
North-Hatt prestige ratings					
80 to 89	5	-	5	-	
70 to 79	4	-	4	-	
51 to 69	3	-	3	-	
up to 50	2	-	2	-	
Retirees and the disabled	2	-	2	-	
Homemaker, no male head	-	-	1	-	
Occupational change, 1961-1966	3	1	3	1	
ENVIRONMENTAL					
Change in residence, 1961-1966	3	1	3	1	
Home, block or brick	4	2	4	2	
Access road, paved	3	2	3	2	
Two or more in household	2	1	2	1	
Total Score					

considered as the termination point for locating typical values. For example, for the up to 34-year age classification the sigma value was derived by adding 100.0 + 82.0 divided by two for determining the sigma. In this example it was .910. Reading from under the larger area of the normal curve the .910 sigma gave a standard score of +1.34. A similar procedure was followed for the next two age groups. For the 65 and over age category 22 yielded a .110 sigma, and a -1.23 value. All values were then adjusted by the 2.36 constant to secure positive score values. The income pattern scale thus developed, and which is exhibited as Table 5, is simply a method for scoring each family on the items in the scale. Possible scores range from 16 to 39.

CHAPTER III

ANALYSES OF INCOME PATTERN SCORES

The basic thesis of this study is that rural families can be classified into distinct mutually exclusive social income patterns. It is assumed that there is a commonness in pluralistic behavior among and between families in any given grouping. This commonness is a result of individual and family attributes that appear to be significantly characteristic of each of the several income groupings. Moreover, this economic hierarchy can be isolated by scoring techniques, if the thesis proposed is supported in fact. In this chapter attempts will be made to demonstrate the effectiveness of score values in analyzing the uniqueness of family groupings at different income levels.

Family Income-Class Breaking Points

The 321 schedules that were originally collected in 1966 were reduced by editing to 300, due to lack of relevant information in 21 of them. An array of the 300 observations according to family incomes revealed clear-cut income-class breaking points. They were (A) up to $1,499, (B) $1,500 to $2,999, (C) $3,000 to $4,499 and (D) $4,500 and over (Table 6). Surprisingly, all but two families in the lower 27 percent reported annual family incomes of under $1,500, and only two families in the upper 27 percent received incomes of less than $4,500. The mid-breaking point was at the poverty borderline for family incomes, or

$2,999-$3,000. It should be pointed out that these income classes are equally separated by $1,500 intervals.

Table 6.--Income-Class Delineation and Related Values, Jackson County Survey, 1966.[a]

	Distribution		Income Pattern Score Values	
	No.	%	Average	Range
A. Up to $1,499	79	26	22	18-27
B. 1,500 to 2,999	96	32	25	19-34
C. 3,000 to 4,499	45	15	27	19-34
D. 4,500 and over	80	27	28	23-34
Total	300	100	25	18-34

[a]All subsequent tables refer to this survey.

Variations in Score Value

The largest average score values measure those patterns of income, in theory at least, which are more important to society, that is, in respect to family income. In brief, the income pattern scale developed is visualized as keeping the individual attributes comprising the scale from self-competition in measurements between different income levels. The implication is (1) that families at a given income level have a mix of attributes that is different from the mix of these same attributes at other income levels, and (2) that income pattern scale scores distinguish these differences significantly.

Scale scores of family heads ranged from 16 to 39. For analytical purposes the householders were divided into six groups according to their score values. The first group was composed of 68 families with scores ranging up to 22. The class interval was two, the second class

being 23-24, and so forth to 31 and over (Table 7). As will be noticed, the most frequently occurring score values ranged up to 26, with 25 to 26 predominating. However, this occurrence varied according to income classes. In the lowest income classification scores were generally low, intermediate in the second and third-income classification, and reasonably high in the top-income category. Thus, scores and income do show a direct consistent relationship.

Table 7.--Numerical and Percentage Distribution of 300 Jackson County Families According to Income Pattern Scores and Family Income Classes.

	Up to $1,499		$1,500-2,999		$3,000-4,499		$4,500 and over		All Classes	
	No.	%	No.	%	No.	%	No.	%	No.	%
31 and over	-	-	5	5.2	4	8.9	20	25.0	29	9.7
29 to 30	-	-	7	7.3	5	11.1	16	20.0	28	9.3
27 to 28	2	2.6	12	12.5	9	20.0	17	21.2	40	13.3
25 to 26	9	11.4	30	31.2	19	42.2	21	26.3	79	26.3
23 to 24	20	25.3	24	25.0	6	13.3	6	7.5	56	18.7
Up to 22	48	60.7	18	18.8	2	4.5	-	-	68	22.7
Totals	79	100	96	100	45	100	80	100	300	
Percent	26		32		15		27		100	

In Table 7 is shown the distribution of all families according to the four income classes outlined, together with the scores appertaining thereto. A Pearsonian correlation analysis with grouped data yielded a coefficient of +.65 between scores and income. This is not as high a correlation as was hoped for but the income pattern scores did differentiate between income classes. When the extremes of score values were carefully reviewed, no family which was placed in the highest score category was found in the lower income bracket. Likewise, there was no

family included at the lowest score level that was placed in the highest income bracket. In Table 7, the correlation between scores and incomes can be visualized as an upward sloping line but not as a perfect diagonal, because the distribution of score values is not perfectly arrayed with income. From these data it may be concluded that even though the amount of annual family income is an important factor for the inclusion of a family head in a given score category, the attributes that govern this determination do not always respond in a like manner. That is, the combination of the factors in the matrix (Figure 3) is somewhat differential, even within a specific income class.

Family-Head Relationships

Four family groupings are herein presented. They are based upon (1) the marital status of the family head and/or (2) the occupational status of the head (Table 8). The first two were husband-wife units. They were separated into two categories according to the male head's civilian labor force classification. Retirees and the disabled were separated from the heads who were in the active labor force. The third and fourth classes were female-head family units and unmarried male units, respectively, irrespective of the occupational status of the head.

In Table 8 these categories are exhibited with their corresponding score and income values, according to an array of score values by class intervals. The most numerous class was the one composed of husband-wife units in which the husband was in the labor force. For these families, the average scores and average annual incomes are clearly related. As scores increase the income levels increase without any overlapping of income levels as occurs with retired or disabled husband-wife units.

Table 8.--Income Pattern Scores Related to Average Annual Income, According to Score Class.

Income Pattern Score	Husband-wife, Employed[a]			Husband-wife, Retired[b]		
	Number	Average Score[c]	Average Income	Number	Average Score	Average Income
Up to 22	2	22	$ 960	25	21	$1,549
23 to 24	27	23	2,601	18	22	1,899
25 to 26	62	26	3,561	10	25	1,536
27 to 28	32	28	4,173	3	27	1,807
29 to 30	26	29	4,719	1	29	5,500
31 and over	29	32	5,407	-	-	-
	Female Head Only			Male Head Only		
Up to 22	36	20	1,086	5	20	768
23 to 24	6	24	780	5	23	1,092
25 to 26	5	25	1,349	2	26	2,500
27 to 28	3	28	4,500[d]	2	27	5,150[e]
29 to 30	1	29	2,400	-	-	-
31 and over	-	-	-	-	-	-

[a]Husband in active labor force.

[b]Husband retired and/or disabled.

[c]All scores were rounded off to nearest whole number.

[d]Includes one family with three employed whose total earnings were $7,500.

[e]Includes one armed service member with earnings in excess of $7,500.

In the retired-disabled family category scores failed to consistently distinguish between the income levels, at least at the third and fourth score levels. The same failure in measurement is repeated in the analyses of female-head units. This appears to indicate that income pattern scores do not adequately measure income relationships in single-head households. Two reasons for this failure are immediately observable. One is the smallness in sample numbers at various score-value levels of single-head households, and the other is that widowhood befalls persons at all educational levels and in all walks of life.

Relationships with Biographical Attributes

A critical analysis of the mix and combination of attributes that affect income pattern score values helps explain some of the inconsistencies previously referred to. It is the differential combinations of attributes in the matrix (Figure 3) that lead to inconsistencies in results. For example, the propensities of individuals to reap monetary rewards for effort are not wholly governed by education, even though in the aggregate the relationship of education to income is positive and direct. The more important of these attributes will be reviewed.

Race.--Race was highly correlated with income pattern scores Although 27.4 percent of all families were nonwhite, 41.5 percent of all households in the lower score bracket were nonwhite (Table 9). The percentage of white families progressively increased from the lower to the higher scores in such a way that at the highest score level 96.5 percent of all family heads was white. This is largely a result of the low score values for education, occupational status, etc., which usually characterized the nonwhite.

Table 9.--Race, Age, and Education Related to Income Pattern Scores.

Family Attributes	Percent by Income Pattern Score Class[a]						
	Up to 22	23-24	25-26	27-28	29-30	31-34	Total
Race:							
White	58.5	64.3	78.4	70.0	86.2	96.5	78.6
Nonwhite	41.5	35.7	21.6	30.0	13.8	3.5	21.4
Age:							
Male, 50 years or less	--	20.0	48.0	62.1	78.6	93.1	60.8
Male, 51 years or over	100.0	80.0	52.0	37.9	21.4	6.9	39.2
Female, 50 years or less	4.8	32.2	67.5	76.3	79.3	86.2	53.0
Female, 51 years or over	95.2	67.8	32.5	23.7	20.7	13.8	47.0
Education:							
Male, 8 years or more	18.6	24.0	45.3	78.4	92.8	89.6	53.2
Male, 7 years or less	81.4	76.0	54.7	21.6	7.2	10.4	46.8
Female, 8 years or more	37.1	40.3	72.7	81.6	99.9	93.1	87.3
Female, 7 years or less	62.9	59.7	27.3	18.4	.1	6.9	12.7
Vocational training:							
Male	--	2.0	12.0	8.1	17.9	34.5	11.2
Total:							
Number	68	56	79	40	28	29	300
Percent	22.7	18.7	26.3	13.3	9.3	9.7	100

[a]Percentage of total within each score category.

Age.--For both the males and females observed, irrespective of race, there existed a high and inverse correlation between scores and age (Table 9). Older people were concentrated in the lower score brackets. All of the male heads and most females in families which scored "up to 22" were over 50 years of age. Moreover, 93.1 percent of the males with scores of 31 or over was 50 years of age or less, as was 86.2 percent of the females. Bearing in mind the correlation between scores and income one can conclude, therefore, that one of the main characteristics of the higher income groups is youthfulness. It is also important to remember that most of the retired and the disabled are concentrated at the lower score values.

Education.--The importance of education in determining income pattern score levels was also highlighted by Table 9. Heads of families receiving the highest scores consisted largely of those with eight years or more of formal education. The same was true for males who had received some adult vocational training.

An observation of the two highest score levels revealed that at least 90 percent of those belonging to these categories had received at least eight years of formal education. The opposite held true when the lower score levels were examined. At the lowest score level, up to 22, only 18.6 percent of the males and 37.1 percent of the females reported eight or more years of formal education. Data analyzed but not exhibited herein show that while 87.3 percent of the female heads and/or homemakers had completed at least eight years of formal education, as compared to 53.2 percent of the male heads. Since higher percentages of females than males fall into the lower score classes, it is apparent that this is a circumstance associated largely with marriage.

The value of vocational training in addition to formal education for males can by no means be overlooked. No male family head who fell in the "up to 22" score level had ever received any kind of vocational training, as contrasted to 34.5 percent of those in the "31 and over" score level.

Relationship with Economic Attributes

Age and education were strongly related, either inversely or directly, with employment and income. Physical ability is another important criterion bearing upon income. Just over 5.0 percent of the male heads reported some form of disability. Nearly three in four of all males and six in 10 of all females stated that they were fully able to work, and had not retired (Table 10). One point of caution is that housewives frequently referred to their ability to work as associated with normal household duties. Likewise female retirees were usually able to perform normal household duties, and did so.

Table 10.--Ability of Heads of Family to Work.

Physical Status	Heads of Households		
	Male	Female	Both
	(%)	(%)	(%)
Fully able to work	74.7	62.0	72.9
Retired, no disability	13.3	34.0	16.8
Total disability	2.8	-	2.3
Limited disability[a]	2.4	4.0	2.3
Retired and disabled	6.8	-	5.7
Total	100.0	100.0	100.0
Number reporting	249	50	299

[a]The disability reported regarded as permanent.

In the income pattern scale, occupations were given prestige score values (Table 5). Since the income pattern scale was not based upon sex, the occupational situations of heads of households were given primary consideration (Table 11).

Table 11.--Percentage Distribution of Employment by Income Classes of 250 Male and 50 Female Heads of Families.

Occupational Classification	Family Income Classes $1,499	$1,500-2,999	$3,000-4,499	$4,500 and up	All
	(%)	(%)	(%)	(%)	(%)
Homemaker	24.7	4.2	4.4	-	8.4
Farm operator[a]	13.0	31.3	31.1	24.7	24.7
Farm employee[b]	7.8	12.5	2.2	-	6.4
Manager, proprietor, etc.[c]	1.3	3.1	6.7	13.6	6.0
Sales and/or clerical	-	1.0	4.4	8.5	3.3
Craftsman and foreman[d]	1.3	3.1	4.4	13.6	5.7
Operatives	-	2.1	8.9	9.9	4.7
Services	-	5.2	2.2	13.6	5.7
Domestic	3.9	-	-	-	1.0
Disabled[e]	7.8	14.6	11.2	-	8.4
Retired	33.7	14.6	6.7	2.5	15.0
Unemployed	1.3	-	2.2	-	0.7
All other[f]	5.2	8.3	15.6	13.6	10.0
Totals	100.0	100.0	100.0	100.0	100.0
Number reporting	78	96	45	81	300

[a]Includes farm manager.

[b]Farm laborer or farm foreman.

[c]Also includes professional and technical workers.

[d]Foreman, other than farm foreman.

[e]Disabled but not retired.

[f]Retired, with or without disability.

Occupation.--Agricultural employments fall largely into the annual family income ranges of from $1,500 to $4,499. Retirees fall generally into low-income levels, and skilled and professional workers predominate at the upper income levels.

The occupation of the male head was the most significant economic characteristic bearing upon family income. Table 12 shows that most of the lowest scores were related to retirement and disability. Small-scale farming was the second largest occupation at this particular level, but it was relatively insignificant. It reached its peak at the 25-26 score level, and then declined progressively. At the highest score level only one in five workers were farmers. Laborers, including farm laborers, were few at the extremes but averaged more or less equally in the intermediate score levels. "Other gainful occupations" included professional services, foremen and all nonfarm related occupations and were definitely identified with higher score values. No one was classified at this category in the 18-22 score grouping, but from the 23-24 score level upwards the percentage occurrence increased progressively, reaching 68.9 percent at the highest level.

Between 1961 and 1966 a number of the male heads changed employment. The study indicates that change in occupation is not as importantly related to score values as is change of residence. Both change of occupation and residence reached comparatively higher proportions chiefly at the two upper score levels.

Table 12.--Economic and Environmental Attributes Related to Income Pattern Scores.

Family Attributes	Percentage in Each of the Several Score Classes						
	18-22	23-24	25-26	27-28	29-30	31-34	Total
	%[a]						
Occupation Male head, all[b]	32	50	74	37	28	29	250
Farmer only	6.3	36.0	40.0	35.1	21.4	20.7	30.0
Farm or other laborer	3.1	18.0	17.3	16.2	21.4	10.3	15.2
Other gainful occupations	0	12.0	26.7	37.8	46.4	68.9	24.8
Retired/or disabled	90.6	34.0	10.7	10.8	7.1	0	24.0
Changed occupation, 1961-1966	18.8	24.0	12.0	29.7	32.1	55.2	25.2
Occupation Female[c]	62	51	77	38	29	29	286
Homemaker only	67.7	48.3	70.1	63.1	55.2	62.1	64.3
Residence[d]	67	56	79	40	29	29	300
Home of block or brick	4.5	1.8	11.4	7.5	31.0	44.8	12.6
Home fronts paved road	28.5	17.9	38.0	45.0	41.3	58.6	35.3
Changed residence 1961-1966	1.5	14.3	15.2	27.5	58.6	72.4	23.3

[a]Percent by class except as otherwise noted.

[b]Number of males in each of the several score levels.

[c]Number of females, regardless of marital status, in each of the several score levels.

[d]Actual number of households in each of the several score levels.

Scores Related to Environmental Attributes

Environmental factors of major interest in this study, based upon data which were available, were (1) type of construction of home, (2) change of residence between 1961 and 1966, and (3) type of access road fronting a respondent's home. Data revealed that homes of block or brick construction were rather closely, but not exclusively, related to the higher income pattern scores. An interesting observation relating to homes is that although the retired and disabled appear at the bottom of an array of scores, and that while only a small proportion of their homes were of block or brick, more than a fourth of them lived along hard surfaced all-weather roads. In part this may be an accident of social progress and in part to property acquisition before removal from the labor force. It will be noted that those heads who scored highest had the highest proportion of homes of permanent construction, frequently resided along paved roads, and were the younger and better educated members of the population surveyed.

The period of time under observation in this study was 1961 to 1966, or a five-year span. Within this period, the internal consistency of residential change was very significant (Table 3). In Table 12, the percentage distribution of change of residence, or geographic mobility, was highly related to income pattern scores. Reasons for moving vary widely, but the fact of geographic mobility appears to be highly associated with income, since high score values and family income have a common denominator.

The fact that relationships between score values and income were not perfectly correlated invited further investigation. This was

followed through by the application of multiple regression techniques, which are reviewed in Chapter IV.

CHAPTER IV

ESTABLISHING SIGNIFICANCE OF SCALE VARIABLES BY ZERO-ONE MULTIPLE REGRESSION ANALYSES

Tests of the internal consistency of the attributes included in the income pattern scale revealed that certain factors had high discriminatory power for measuring levels of family income (Table 2). However, from these tests neither the degree of association between variables nor their interaction could be more than surmised. It was reasoned that if the income pattern scale possessed high utility, then each of the specific variables which it contained would have to be measured for statistical significance (.05 to .01 levels of probability). To accomplish this purpose, the zero-one, or dummy variable, regression analysis was used because of its utility to separate the original observations logically into mutually-exclusive classes. The dummy variable approach is quite useful in analyzing qualitative variables, such as race and marital status. It is also readily adaptable for analyzing quantitative variables such as age, family size, and net worth when it is thought that only broad groupings of such data are to be used, as in this study.[1]

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[1]See J. Johnston, Econometric Methods (New York: McGraw Hill, 1963), pp. 221-228, and/or William G. Tomeck, "Using Zero-One Variables with Time Series Data in Regression Equations," Journal of Farm Economics, 45 (November, 1963), pp. 813-822.

The dependent variable (Y) used in the zero-one model was the income pattern score, and all the independent variables were related attributes (Table 13). In this analysis each of the independent variables was capable of only two values, viz., one and zero. For example, $X_1 = 1$ if the person observed was of the white race but "0", if otherwise. The list of numbered variables in Table 13 shows positive values only (X_1, X_2, etc.), but "0" values are implied for all "otherwise" categories.

The general equation designed was:

$Y = b_0 + b_1X_1 + b_2X_2 + \ldots\ldots b_{16}X_{16}$ where $b_{i's}$ are constants to be determined, i = 0 .....16.

All the variables were defined in such a way that the scoring of non-possessors or opposites, always fell into the "otherwise" categories. Hence, the constant b_0 designated the base score which approximated the average score, and the remaining coefficients indicated the respective contributions of the attributes (X values).

The zero-one analysis was applied to different classifications of the population studies. One analysis was made (1) with the total population as the universe (300 families), and (2) one for each subdivision of the four income levels previously described (Table 6). Subsequently, husband-wife family units (235), and single-head family units (65) were analyzed. Finally, the husband-wife units were separated into labor force and non-labor force families for more detailed observation. In all these analyses the independent variables were grouped according to the three component parts defined earlier: biographic, economic and environmental (Table 2 and Figure 3).

Table 13.--Variables Tested in the Zero-One Least Square Regression Analysis.

$X_0 = 1$	
BIOGRAPHIC	
$X_1 = 1$	If family was white.[a]
$X_2 = 1$	If family was a husband-wife unit.
$X_3 = 1$	If male head was able to work.
$X_4 = 1$	If male head had vocational training.
$X_5 = 1$	If male head was 50 years of age or younger.
$X_6 = 1$	If female head was 50 years of age or younger.
$X_7 = 1$	If male had completed eight years of education or more.
$X_8 = 1$	If female had completed eight years of education or more.
ECONOMIC	
$X_9 = 1$	If male head was farmer (primary occupation).
$X_{10} = 1$	If female was homemaker only.
$X_{11} = 1$	If family situation improved between 1961 and 1966.
$X_{12} = 1$	If male head changed occupation between 1961 and 1966.
ENVIRONMENTAL	
$X_{13} = 1$	If family changed residence between 1961 and 1966.
$X_{14} = 1$	If family consisted of two or more persons.
$X_{15} = 1$	If home was constructed of block or brick.
$X_{16} = 1$	If main access road to home was on paved.

[a]Zero (0) values are implied for all opposite values for X_1 to X_{16}, inclusive.

Analysis by Income Levels

In Table 14 is presented the estimates of coefficients, standard errors and "t" values for each attribute tested. In their derivation the null hypotheses that a regression coefficient is equal to zero was rejected at the .01 level of significance, as shown by the F test in Table 14. The degrees of freedom for tests of significance of regression varied according to sub-groupings. There were 299 degrees in the total population, 77 in family-income sub-group A (Up to $1,499), 95 in B ($1,500 to $2,999), 44 in C ($3,000 to $4,499) and 80 in D ($4,500 and over). The results obtained for the total population were compared with those for each of the four income groups (Table 14). Where no value for a given category was shown it meant that at that point the variable was either present or missing at all times (100 percent level).

Overall, it can be pointed out that the three most important variables, as based both on beta coefficients and "t" values, were (1) the ability of the male head to work at the time of interview, (2) a change in the occupational status of the male head between 1961 and 1966, and (3) a change in family residence between 1961 and 1966. The respective X values were X_3, X_{12} and X_{13}.

Biographic variables.--The racial attribute (X_1, being white) was not highly significant (t = .82), but the beta value (regression coefficient) for the total population was positive.[2] Race had a negative but non-significant effect on score values at income levels A and D.

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[2]In these analyses the coefficients of the dummy variables, together with the constant term, provide an estimate of the differences among levels of the dependent variable.

Table 14.--Estimates of Coefficients, Standard Errors and "t" Values for 16 Variables Affecting 300 Households and Four Income Levels.

	Estimates of Coefficients					Standard Errors					"t" Values				
	T	A	B	C	D	T	A	B	C	D	T	A	B	C	D
	b_t	b_a	b_b	b_c	b_d	s_t	s_a	s_b	s_c	s_d	b_t/s_t	b_a/s_a	b_b/s_b	b_c/s_c	b_d/s_d
0	19.38	18.90	21.29	21.06	19.10	0.41	0.81	0.94	2.88	1.50	47.06	23.34	22.61	7.32	12.76
X_1	0.21	-0.50	0.76	1.08	-0.42	0.26	0.45	0.43	2.34	0.68	0.82	-1.13	1.76	0.46	-0.62
X_2	-1.10	0.29	-1.95	-0.99	-1.52	1.33	1.87	2.03	2.44	2.17	-0.90	0.15	-0.95	-0.41	-0.70
X_3	2.78	0.92	2.83	3.53	2.53	0.34	0.86	0.62	0.88	1.72	8.15*	1.08	4.58*	3.99*	1.47
X_4	0.49	4.40	0.51	-0.51	0.55	0.37	2.35	0.78	1.02	0.54	1.30	1.87	0.66	-0.50	1.02
X_5	0.28	0.63	0.90	0.18	-0.28	0.28	0.61	0.58	0.94	0.62	0.99	1.03	1.56	0.19	-0.45
X_6	0.41	0.69	0.40	0.31	0.83	0.28	0.62	0.47	1.02	0.68	1.48	1.11	0.86	0.30	1.22
X_7	1.06	1.09	0.59	-0.17	1.73	0.26	0.80	0.43	0.70	0.50	4.10*	1.35	1.38	-0.24	3.48*
X_8	0.71	0.67	0.31	1.46	1.35	0.26	0.50	0.43	1.17	0.81	2.69*	1.33	0.73	1.26	1.69
X_9	-0.30	0.53	-0.44	-0.75	0.20	0.28	0.85	0.52	0.83	0.45	-1.09	0.62	-0.84	-0.91	0.44
X_{10}	-0.15	0.41	-0.44	-0.05	0.02	0.22	0.47	0.45	0.84	0.41	-0.68	0.87	-0.99	-0.06	0.05
X_{11}	0.23	-0.83	0.32	0.24	0.18	0.25	0.62	0.47	0.94	0.42	0.96	-1.33	0.68	0.26	0.43
X_{12}	2.40	1.96	2.57	2.13	2.82	0.28	0.61	0.58	0.85	0.49	8.58*	3.19*	4.44*	2.52*	5.77*
X_{13}	1.94	1.99	1.43	1.75	2.12	0.27	0.97	0.47	0.79	0.44	7.31*	2.06*	3.06*	2.20*	4.81*
X_{14}	1.35	1.93	0.03	--	1.50	0.40	0.61	0.90	--	1.13	3.33*	3.15*	0.03	--	1.33
X_{15}	1.70	-2.54	1.32	2.00	2.28	0.32	1.35	0.68	1.32	0.46	5.33*	-1.88	1.93	1.53	5.00*
X_{16}	1.04	1.20	0.43	0.60	1.20	0.23	0.51	0.46	0.69	0.39	4.60*	2.33*	0.92	0.88	3.09*
N	300	78	96	45	81						F test for significance of regression				
R^2	0.79	0.60	0.72	0.67	0.78						df f1:	19	18	18	17	18
r	.89	.77	.85	.82	.88						f2:	280	59	77	27	62
p	0.01 level (F test)										F Ratio:	54.53	5.02	11.27	3.35	12.47
											Critical Value:	1.97	2.32	2.24	2.74	2.32

[a]Significant at .05 level.

*Significant at the .01 level.

Although the marriage of the male head had a high internal consistency (Table 3), the beta value of husband-wife units (X_2) was negative (-1.19). More significant than marriage was the presence of two or more persons in a household (b_{T14}). As pointed out previously, the ability of the male head to work was a major contributing factor toward high scores (see b_{T3}, significant at the .01 level). This was true at all income levels, with the exception of group A in which most of the family heads were retired or disabled.

Even though the higher income groups were characterized by the predominance of young people, the zero-one analyses did not reveal any significance in respect to age for either sex (50 years of age or younger), but was of more importance for females than for males (see b_{T5} and b_{T6}, Table 14).

Education was a very important factor contributing toward high scores. The possession of eight or more years of education appeared to have more importance for males than for females (see b_{T7} vs b_{T8}). The significance of vocational training (X_4) for males was marked, but did not reach the .05 level as compared to .01 for education (X_7).

Economic variables.--The occupation of farmer (X_9) was related negatively to scores. With females, the same was true for the occupation of homemaker only (see b_{T9} and b_{T10}). However, "t" values indicated these results were not statistically significant. Tabular analyses showed that 75.3 percent of the males in the higher income group ($4,500 and over) was engaged in non-farm occupations (Table 11), and there was only one widow in this classification--a retiree with three wage earners in the family

The belief expressed by respondents that their family situations were improving (X_{11}) was not significantly related to scores. The most outstanding attribute in the economic category was change in occupational status (X_{12}). Such a change was statistically significant at the .01 level for all families combined, and for subgroups with the exception of C (.05 level).

Environmental variables.--The analyses seem to contradict the earlier results (Table 12) that a change of residence is significantly more important than change in employment. However, an examination of the coefficients b_{T12} and b_{T13} leads to the conclusion that the latter is of more importance than the former (Table 14), although both were significant at the .01 level for the total population, and at the .01 and .05 levels for the four income classes.

The "t" value for the number of persons in the household (X_{14}) was significantly and positively related to high score values, whereas marriage was negatively associated with scores (X_2). This may have resulted from the fact, in part at least, from the high proportion (88.8%) of "two or more persons per household" (Table 2). In this one instance, the use of grouped data in the regression analysis may have given biased results.

The occupancy of block or brick homes (X_{15}) was of high significance (.01) ror all 300 families combined. Within each income subgroup it was also significant, except for level A where a negative effect was observed.

If the prinicpal access to a home was a paved road, the internal consistency for this item was high (Table 3). The zero-one analysis also indicated that "paved road" (X_{16}) was related directly and

significantly to scores for all families together, and also for income levels A and D, separately. A good proportion of those in class A who lived along paved roads consisted of retirees who had either established homes along paved roads before retirement, or were directly benefited at some unspecified time by local road improvement programs.

The general view of this analysis is that the environmental attributes were all significant at one or more income levels, as compared to three of the biographical, and one of the economic. Finally, it should be mentioned that the coefficients of determination obtained (R^2) were all fairly high at the different levels in which this analysis was performed. Seventy-nine percent (79%) of the variability of the scores was explained by these 16 variables for the 300 households ($R^2 = .7870$).

Analyses of Single-Head and Husband-Wife Family Units

In order to investigate how the linear effects of the independent variables differed within family groupings, the 300 families observed were reclassified into single-head and husband-wife units. It was surmised that important contrasts in the behavior of the variables would be observed between these two subgroups. As with the previous analyses, the null hypothesis of a zero (0) regression coefficient was rejected at the .01 level for the regression significance test (F test) shown in Table 15. There were 234 total degrees of freedom for husband-wife family units and 64 for single-head units in this test. Again, the blank spaces indicate a 100 percent presence or absence of a specific variable.

Biographic variables.--The color of skin (X_1), or being white, had a depressing effect on income pattern scores for single-head households.

Table 15.--Estimates of Coefficients, Standard Errors, and "t" Values for 16 Variables Affecting 65 Single-Head and 235 Husband-Wife Family Units

Variable	Estimates of Coefficients		Standard Errors		t Values	
	S b_s	HW b_h	S s_s	HW s_h	S b_s/s_s	HW b_s/s_h
0	19.39	16.59	1.37	1.83	14.12	9.07
X_1	-0.93	0.45	0.71	0.27	-1.31	1.68
X_2	--	--	--	--	--	--
X_3	1.86	3.23	1.20	0.32	1.55	9.92*
X_4	--	0.57	--	0.32	--	1.74
X_5	0.94	0.47	1.17	0.34	0.80	1.39
X_6	1.99	-0.21	0.75	0.32	2.65*	-0.65
X_7	3.29	0.86	1.24	0.25	2.65*	3.49*
X_8	2.12	0.44	0.72	0.27	2.96*	1.65
X_9	-1.87	-0.40	1.88	0.25	-0.99	-1.64
X_{10}	-1.20	0.17	0.59	0.22	-2.02*	0.79
X_{11}	-1.15	0.44	0.77	0.24	-1.49	1.81
X_{12}	1.34	2.56	1.46	0.26	0.91	10.05*
X_{13}	0.80	2.13	1.07	0.25	0.74	8.68*
X_{14}	1.75	1.64	0.66	0.90	2.66*	1.82
X_{15}	-0.24	1.84	1.25	0.29	-0.19	6.27*
X_{16}	0.96	1.02	0.66	0.22	1.45	4.71*
N	65	235	F test for significance of regression			
R^2	0.58	0.81	df, f1:		16	18
r	.76	.90	f2:		48	216
p	0.01 (F test)		Critical value:		2.40	1.97
			F ratio:		4.07	52.04

*Significant at the .01 level.

The contrary occurs for husband-wife units, and in both classifications this characteristic was statistically significant (.05 and .01 levels). The single-head family units had a much lower proportion of whites among them (58.4%) than husband-wife units (77.8%). Moreover, single-head units were the most deprived economically since widows and widowers usually were the family heads, and many of them were retired, disabled, or unemployed.

Again the aiblity of the male head to work (X_3) was a positive contributing factor toward high scoring for husband-wife units at the .01 level, but for single-head families at the .07 level. The fact that only 23 percent of the heads of families in single-head households were men may help explain this difference in significance. Moreover, the majority of the men were not gainfully employed.

The inverse effect of age of the family head was a positive factor contributing to upgrading of income pattern scores, except for the females in the husband-wife units (X_6). There the effect was negative and the "t" value was low (Table 15). The "t" value was also low for the male heads, but the effect of less than 50 years of age on their income pattern scores was positive.

Education (X_7, X_8) proved to be of great importance in both subcategories, as had also been observed in the findings previously reviewed (Table 14). Eight or more years of formal education were among the strongest contributors toward high scores for males in single-head units. Vocational training (X_4) had a positive effect for husband-wife units, but this variable had to be dropped from the analysis of single-head households because of lack of data.

Economic variables.--One significant economic variable was the classification of the female as "homemaker only" (X_{10}). The direction of effect relative to homemaker only was negative for unmarried heads and positive for married couples, although the positive value ($t = 0.79$) was considerably associated with chance. The change in occupational status of the male head was statistically significant only for husband-wife units (X_{12}).

As previously explained, the occupation of farming (X_9) was often negatively related to score values (Table 14). This inverse relationship was again established by regression analyses (Table 15).

The appraisal by the family head of his (or her) family situation (X_{11}) as being better in 1966 than in 1961 was positive in effect and significant for husband-wife units, but negative with a 93 percent level of probability for unmarried heads.

Environmental variables.--In the analysis of families according to one and two family heads, the environmental factor contributed to score values rather moderately as compared to their contributions in income classifications. Here, as in income classes, the effect of geographic mobility was positive (X_{13}), but not significant for single-head units. Likewise, family-size maintained its significance (X_{14}), as did block or brick construction of homes (X_{15}), but only for husband-wife units. The number of attributes which were significantly related to income pattern scores were more closely identified with husband-wife units, than with single-head units.

This analysis underlined the importance of husband-wife units regarding both the ability of the male head to work (X_3) and of formal education (X_7). They were fundamentally related to high income pattern

scores. At the same time, occupational change (X_{12}) and geographic mobility of families (X_{13}) was of high statistical significance. This duplicates findings reported for all families (Table 14).

For the single-head units the findings are different. Although the importance of education was verified by all the various analyses, opposite signs in beta coefficients in several instances highlighted a divergence from the usual. Interesting contrasts were observed between the two classes of family units when the coefficients of determination (R^2) and the correlation coefficients (r) were examined. This indicated that, even though the correlation for single-head family units was not low, the income pattern scores were best fitted to function with husband-wife family units.

Husband-Wife Units, Husbands in Labor Force

The husband-wife classification was the largest family-head category in this study. The effect of mutually exclusive classes upon scores was considered vital in testing the utility of the income pattern scale. In this section, husband-wife units with employed male heads are analyzed, as are family units in which the male heads are no longer in the labor force. As in the previous analyses, the null hypothesis of a zero regression coefficient was rejected at the .01 level of significance (Table 16).

Biographic variables.--Adult vocational training (X_4) and levels of formal education (X_7) were the most significant influences bearing upon income pattern scores, but only for family with employed male heads. Race (X_1) and age (X_5) contributed to scores in limited degrees, with the exception of age (X_6) of female heads ($t = -0.73$). In general, the

Table 16.--Estimates of Coefficients, Standard Errors, and "t" Values for 16 Variables Affecting Husband-Wife Units In and Out of the Labor Force.

	Estimates of Coefficients		Standard Errors		t Values	
	NLF	LF	NLF	LF	NLF	LF
	b_n	b_1	s_n	s_1	b_n/s_n	b_n/s_1
0	17.63	22.18	3.10	0.97	5.69	22.75
X_1	0.44	0.41	0.59	0.32	0.74	1.28
X_2	--	--	--	--	--	--
X_3	--	--	--	--	--	--
X_4	-1.23	0.64	2.06	0.33	-0.60	1.94*
X_5	0.39	0.52	1.49	0.36	0.26	1.44
X_6	0.08	-0.27	0.81	0.36	0.10	-0.73
X_7	--	1.02	--	0.27	--	3.72*
X_8	0.56	0.43	0.50	0.34	1.12	1.29
X_9	--	-0.42	--	0.26	--	-1.65
X_{10}	0.54	0.03	0.54	0.25	1.00	0.14
X_{11}	-0.80	0.41	2.18	0.24	-0.36	1.67
X_{12}	2.98	2.32	0.54	0.31	5.56*	7.46*
X_{13}	1.83	2.24	0.84	0.26	2.19*	8.60*
X_{14}	--	1.46	--	0.90	--	1.63
X_{15}	0.93	1.87	1.27	0.30	0.73	6.15*
X_{16}	0.82	0.97	0.52	0.25	1.57	3.87*
N_2	57	177	F test for significance of regression			
R^2	.64	.76	df, f1:		16	16
r	.80	.87	f2:		40	160
p	0.01 (F test)		Critical value:		2.42	2.12
			F ratio:		4.49	30.82

*Sig ificant at .01 level.

significant variables that were positively related to scores were more common to labor-force households than to those of retirees and the disabled. Moreover, the biographic variables more often than others had empty cells.

Economic variables.--Within the economic component and consistent with previous analyses, change in occupational status (X_{12}) was the strongest positive contributing factor toward high scores for both the subgroups under consideration. The occupation of farmer (X_9) exhibited the same inverse effect as in previous classifications. The negative relationship for family improvement (X_{11}) for families outside the working force indicates that family situations are thought to be worsening, which is probably related to reduced family incomes. For undetermined reasons, the occupation of "homemaker only" for females (X_{10}) did not show a negative sign as it did for the total population and for single-head units (Tables 14 and 15). However, this can be partially explained by the fact that homemakers in husband-wife units were positive contributors to higher scores, as previous analyses indicated (see b_{H10} in Table 15). Yet the variable, "homemaker only," was not statistically significant (see "t" value for X_{10} in Tables 15 and 16).

Environmental variables.--The largest number of statistically significant factors were found within this set of variables. Family mobility (X_{13}) was the second most influential variable within both husband-wife subgroups, but its importance was greater upon those in the labor force (b_{N13} vs b_{L13}). A home constructed of block or brick (X_{15}) and a paved access road (X_{16}) were both statistically significant at the

.01 level only for work-force families. With only one exception -- vocational training (X_4) -- the significant variables related to labor-force families were the same as those for all the 235 husband-wife units.

Analytical observations.--The analyses of the two subclasses of husband-wife family units further confirm previous conclusions regarding the positive workability of the income pattern scale. As was shown by the several variables in these analyses as well as earlier, the scale performed better for husband-wife family units than for single-head units. This conclusion also seems justified based upon R^2 coefficients, or .76 and .64, respectively, for labor force versus other families (Table 16). One analytical limitation encountered in these analyses was the smallness in numbers of specific categories. For example, single-head households could not be subdivided according to sex, marital status and occupational classification. Still, in spite of limitations, the results justify the delineation of social patterns of family income (Chapter V).

CHAPTER V

SOCIAL PATTERNS OF INCOME

A review of literature reveals that little systematic attention was given to social patterns of rural family income before this study was started. In 1951, however, social patterns of farming were suggested.[1] In general, the major concern of rural sociologists, has been largely with locality and community groupings.

Traditionally, the period between beginning adulthood and retirement or death has been devoted to income endeavors. With few exceptions, one's biographical and economic attributes have been closely intertwined with those of his environment. As often publicized, the problems of the poorly educated differ greatly from those of high school and college graduates. A thesis commonly accepted is that persons with approximate educational and otherwise structured associations will exhibit great similarities of action, including occupational activities, than will individuals conditioned by diverse resource values and interests. Because of these recognized similarities and the tendency of humans to establish habitual patterns of action, the concept of social patterns of rural income is realistic.

In this study the social unit was the family, and the guiding influence of the family was its functional head. While accepted methodology

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[1]Sloan R. Wayland, Social Patterns of Farming (New York: Columbia University Seminar on Rural Life, Columbia University), 1951.

was employed to measure the significance of various attributes affecting observed family behavior (Table 3), it was not possible from the data available to determine what induced families possessing like attributes to be somewhat diversely as well as similarly motivated. Nevertheless, the data were adequate to develop an exploratory income pattern scale. By its use, every individual household was scored and placed in appropriate categories according to score values and other characteristics. Later, linear regression methods were used to isolate significant factors associated with score values.

A review of all results hitherto obtained suggested that the mix of like attributes (Figure 3) did not always yield identical results. Certain conclusions drawn from these observations were that in any given universe (1) the social characterisitcs of the family head become of utmost importance, (2) the output of variable combinations affecting family action must be rationalized in some logical fashion, and (3) any scale developed to measure patterns of combinations or associations of attributes related to family income must reflect characteristic differences between families.

When this study began, four levels of income were assumed to be social patterns of income (Table 6). This was based upon the homogeneity of distinct income groupings obtained from an array of family incomes. However, they provided only partial support ($r = +.65$) to the thesis objective. This resulted in further explorations of the data. An expansion in the number of patterns was then made by reclassifying the family heads into seven patterns according to a combination of occupational, income, and family-head characteristics (Table 17). The description and additional analyses of these seven patterns offers justification

Table 17.--Conceptualized Social Patterns of Rural Family Income.

Pattern	Income Range	Classification of Household	Total		Average Score Value
			No. (300)	% (100.0)	
I	No Limit	Retirement[a]	57	19.0	23
II	No Limit	Single-head	65	21.7	22
III	Up to $1,499	Subsistence	12	4.0	24
IV	1,500 to 2,999	Low-income	57	19.0	26
V	3,000 to 4,499	Mixed Occupational	32	10.6	27
VI	4,500 to 5,999	Residential--Commercial Farm	50	16.7	28
VII	6,000 and over	Rural Nonfarm	27	9.0	29

[a]Husband-wife family units, males retired and/or physically disabled.

for their retention. Their identification is given in Table 18, which follows. It will be observed that average score values range from 23 to 29 from Pattern I to Pattern VII, inclusive (Table 17).

Description of Income Patterns

Pattern I: non-civilian labor force households.--Families included in Pattern I were husband-wife units of which the husbands were permanently removed from the civilian labor force through retirement or because of self-rated physical disability. They represented nearly one in five of all families, with a median annual family income of $1,473, and an annual per capita income of $633 (Table 18). Nearly 79 percent of the husbands were past 62 years of age, their incomes being derived largely from Social Security, Old Age Assistance (OAA), or other sources.

Table 18.--Exhibit of Selected Individual and Family Characteristics Associated with Social Patterns of Family Income.

Individual or Family Characteristic	Social Income Patterns[a] I	II	III	IV	V	VI	VII
Annual family income range	Up to $7,500	Up to $8,500	Up to $1,499	$1,500-2,999	$3,000-4,499	$4,500-5,999	$6,000 and over
Median annual family income,.....dollars	1,473	913	b	2,466	3,500	4,530	7,750
Annual per capita income,.....dollars	633	661	189	464	908	1,353	2,062
Number of persons in family,.....median	2.6	1.3	3.5	3.5	3.0	3.0	4.0
	----------	----------	----------	----------	----------	----------	----------
				%-			
Occupation of male head: farmer only	--	21.4	81.8	66.0	51.5	28.0	4.0
Laborer, farm and nonfarm	--	21.4	9.1	16.0	6.0	6.0	15.0
Gainful employment, other than above	--	21.4	9.1	18.0	42.5	66.0	85.0
Retired and/or disabled	100.0	35.8	--	--	--	--	--
Occupation of female head, homemaker	80.3	56.0	66.7	82.0	70.0	66.0	30.0
Gainful employment	14.3	22.0	33.3	18.0	30.0	34.0	70.0
Retired and/or disabled	5.4	22.0	--	--	--	--	--
Type of home, block or brick	3.5	9.4	8.3	7.0	9.4	26.0	37.0
Painted frame	61.4	39.0	58.4	45.6	68.8	64.0	59.3
Unpainted frame	35.1	51.6	33.3	47.4	21.8	10.0	3.7
Home fronts on paved road	33.3	18.8	25.0	15.8	48.5	50.0	44.0
Number of families (N=300)	57	65	12	57	32	50	27

[a]See Table 17 for definitions.

[b]Badly skewed distribution. The average income was $1,154, and the mode, $960.

Approximately one in seven of the wives were employed for income outside the home. Median educational levels of both husbands and wives were relatively low, or 5.3 and 6.9 years, respectively (Table 19). As a rule, Pattern I families lived in unpainted frame or painted frame homes, which frequently lacked modern household and sanitary conveniences. Only one in three of the homes faced paved access roads.

Pattern II: single-head households.--The heads of single-unit households were predominately women, usually widows, and outnumbered male heads by nearly five to one. Approximately three in four of all these heads were not in the civilian labor force, being largely homemakers only, of whom some were also retired and/or disabled. Pattern II, as did Pattern I, represented around one in five of all families. The average age of female heads was about 62 as compared to 58 for males, and the median ages were 56 and 65, respectively. And, as was generally observed, the female heads were better educated than their male counterparts (Table 19), their median educations being 7.0 and 4.0, respectively. Their median family income was around $913, and per capita income $661. In size, the median family ranged from one to two persons, and the homes in which they lived were largely frame, and usually fronted dirt or gravel roads.

Pattern III: subsistence households.--Families classified as Pattern III households were limited in number, and represented about one in 25 of all families. As a rule, both male heads and homemakers were poorly educated, their median educational levels being 4.5 and 7.5, respectively. More than half the male heads were over 50 years of age, but their wives were relatively youthful, since the majority of them were under 40 years of age. The male heads were mainly small-scale

Table 19.--Age and Educational Characteristics of Male Heads and Homemakers According to Income Patterns

Pattern By Sex		Age		Education	
		Ave.	Med.	Ave.	Med.
I.	Male	70.4	70.2	5.1	5.3
	Female	62.9	64.7	6.6	6.9
II.	Male	57.6	56.5	4.8	4.0
	Female	62.4	65.0	7.5	7.0
III.	Male	47.2	52.5	4.3	4.5
	Female	43.0	40.5	7.2	7.5
IV.	Male	45.5	49.0	6.8	6.5
	Female	40.6	44.0	8.3	8.3
V.	Male	43.9	43.5	8.8	8.3
	Female	39.9	39.5	9.8	10.3
VI.	Male	46.3	47.3	9.5	9.9
	Female	42.4	43.5	10.0	10.0
VII.	Male	40.0	40.3	11.0	11.9
	Female	37.2	33.5	12.0	11.8

farmers, farm and general laborers, and one in three of their wives was gainfully employed, at least now and then. The average annual family income was just over $661, and the annual per capita income, $189. Homes were usually of frame construction, and most families lived along dirt or gravel roads.

Pattern IV: low-income farm households.--Pattern IV households, as were III, V, VI, and VII, were husband-wife units. Their annual family incomes ranged between $1,500 and $2,999. They comprised just over one in five of all families. The median age of the husbands was 49.0 and of the wives, 44.0. Their average ages were 45.5 and 40.6, respectively. The median and average years of education of the male heads were very close together, or 6.8 and 6.5 years, respectivley. Comparable figures

for the homemakers were 8.3 and 8.3. Two-thirds of the male heads were farmers, the other third being evenly divided between labor, operative, craftsmen and ministerial employments. Approximately, one in five of all wives were gainfully employed, usually in low-skilled occupations. The annual median family income was under $2,500, and the annual per capita income less than $500. Fair proportions of all homes were painted frame structures, and one in six of all homes fronted on paved roads.

Pattern V: mixed occupational households.--Pattern V families were above the commonly designated family poverty level of $3,000 annuallly, their actual incomes ranging from $3,000 to $4,499. The median age of the husbands was 43.5 years, and that of the wives, 39.5 years. The median education of males was 8.3 years; of females, 10.3. Slightly over half the male heads were farmers, or 51.5 percent, and except for 6 percent of the others who were laborers the remainder worked in employments with higher occupational prestige ratings than enjoyed by farmers. About three in ten of all wives were also gainfully employed, most of whom were service workers, operatives and professionals. The median annual family income was $3,500, and the average per capita annual income, $908. While the homes that Pattern V householders occupied were usually of painted frame construction, nearly half of them were located along paved roads.

Pattern VI: residential-commercial farm households.--Pattern VI households were composed mostly of nonfarm families, with annual incomes ranging from $4,500 to $5,999. The average age of the male head was 46.3 years (median 47.3), and that of homemakers, 42.4, years (median 43.5). Seven in every ten male heads were nonfarmers, most of whom

scored in the middle values on occupational prestige ratings, although one in 17 engaged in various kinds of laboring employment activities. Most of the employed wives were service workers, operatives or professionals, although a small percentage held low-prestige employments. The average annual family income approached $4,900, the median being $4,530, and the per capita income, $1,353. About three in ten of the homes occupied were constructed of block or brick, and half of all homes fronted on paved roads.

Pattern VII: rural residential nonfarm households.--Householders placed in Pattern VII were relatively young. Both the average and median age of the males approximated 40 years; those of the homemaker, 37 and 33 years, respectively. The minimum annual family income of Pattern VII was $6,000. Both the heads and homemakers were rather well educated, the average being 11 years for the males, and 12 years for the females. The median was nearly 12 years for both sexes. Nearly nine in ten of all male heads were in the civilian nonfarm labor force, as were seven in ten of all homemakers. Professional, clerical and service occupations chiefly comprised the gainful employments of homemakers.[1] The male heads were mainly professionals, craftsmen and foremen, but about a third of the nonfarmers were operatives or service workers.[1] Average family incomes approached $8,000 per year, with a median of $7,750. Annual per capita incomes exceeded $2,000. More than a third of all families lived in homes constructed of block or brick, and nearly half lived along paved roads.

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[1]Many of the service workers were state hospital employees, and were moderately well paid.

Evaluation of Family Income Patterns

The occupation of farming in the South is decreasing in importance relative to nonfarm employments. This has induced major shifts in residence from rural farm to rural nonfarm, at least by definition. Added to this, the outmigration of youth has left a backlog of older people, especially farmers, retirees and widowed. Collectively, these changes are so vast and so intertwined that they invite new approaches to human resource problems in southern rural areas. Thus, the present need for reclassifying rural families for informational and public programming purposes is unquestioned.

In this thesis, a proposal for new classifications of rural residents was advanced. This classification was based upon family incomes and related family characteristics. By various means it was critically appraised to determine if the patterns so classified were distinctively different, as in general they were found to be. The usefullness of this classification is apparent when a human resource profile of a county or area is desired. It is recognized that further refinement in the patterns would magnify their differences. With increased emphases upon differences, a scale for measuring rural social patterns of income could be so perfected that for its purpose it would be equally as valid as a level-of-living scale for measuring family well-being.

CHAPTER VI

SUMMARY AND CONCLUDING OBSERVATIONS

Summary

The hypothesis that rural people have distinctive demographic and socioeconomic income correlates that can be delineated into social patterns of family income was demonstrated in this study.

The income pattern scale developed contained three groupings of variables, i.e., biographic, economic and environmental. No variable was retained in the scale unless it was sharply diagnostic. To assure this characteristic, each variable was subjected to the critical ratio test (CR), which is the significance of differences between two percentages. No item was retained in the scale unelss it yielded a "t" value of 2:00 or above. Percentages were determined by using the upper and lower 27 percent of an array of family incomes.

Assignment of high and low score values to the individual items in the scale was determined by the sigma method of scoring under which high and low score values are read from areas under the normal curve. A corrective constant was used to eliminate negative signs. The final scale consisted of 22 items capable of yielding high and low scores of 39 and 16, respectively.

Each family was scored, classified into selected categories, and subjected to tabular and regression analyses. In these analyses the score value was the dependent variable, Y.

Analyses clearly established that score values were significantly related to income pattern scores. Among the significant variables affecting scores were (1) the ability of the male head to engage in gainful employment, (2) formal education, (3) change in employment status, (4) change in family residence, (5) two or more persons per household, (6) type of construction of the home, (7) paved access road, and for certain classifications of families (8) adult vocational training.

Initially and arbitrarily four levels of income were selected to designate social pattern of income classes. As analyses progressed it was discovered that although a variable had a very high internal consistency it did not necessarily govern an individual's propensity to produce income. The data used, while not as adequate as could be desired, did allow for the delineation of seven patterns of rural family income.

Families placed in Pattern I (Table 17) were husband-wife units of which the male heads were not actively a part of the civilian labor force. They were retirees and the disabled. The more affluent and economically active families were placed in Pattern VII. The results show that there was a consistent change in variable relationships from Patterns I to VII, inclusive. Average and median ages fell, the proportion of farmers and laborers progressively declined, but educational attainments rose, as did incomes, and the porportion of families possesing homes of superior quality as well as access to paved roads. Average income pattern scores rose from 23 to 29 from Pattern I to VII, inclusive.

Concluding Observations

The results of this study were not startling. They did amply corroborate, however, what other social scientists have previously discovered, namely, that the conceptualization of rural problems is a necessary requisite for the elimination of poverty.

The study submits the seven social patterns of family income as one means of conceptualizing the profile of rural poverty so that programs can be directed to specific groups of rural people for specific remedial purposes. Admittedly, the income pattern scale needs some revision before it can be properly accommodated to Patterns I through VII, herewith submitted. But the objective of this thesis was fully demonstrated: rural families can be distinctly separated into social patterns of rural family income, thereby providing useful knowledge for society.

APPENDIX

Schedule No._____
(Identification Survey)

DECISION-MAKING IN SELECTED AREAS OF HUMAN RESOURCE DEVELOPMENT

THE DEPARTMENT OF AGRICULTURAL ECONOMICS
University of Florida, Agricultural Experiment Station
Gainesville, Florida
in cooperation with
Regional Project S-61, Southern Agricultural Experiment Stations

Location: Cluster No.___; House call number___.

I. Identification: Jackson County, Florida, Summer, 1966.

1. Name of Head of Household_____.

2. Address_____.

INTERVIEWER: Please hand respondent the statement explaining the nature of this survey, and explain its purpose. Then ask:

3. Please tell me something about your family. Is it
(1) A husband-wife family? Yes___, No___, NA___.
If yes, inquire - Have you been a husband-wife family for
Five years or more (1961 or before)....(___) or
Less than five years (since 1961).....(___).

4. If a husband-wife family, ask-
(1) Did you live on this same place in 1961? Yes___, No___, NA___
(2) If not, where did you live in 1961?_____

INTERVIEWER: Observe and check appropriate categories below.

5. Type of residence: open country__, hamlet or crossroad settlement__.

6. Type of road: dirt__, all-weather__, unsurfaced__, hard surface__

7. Race: white___, non-white___.

8. Type of house: unpainted frame, etc.__, painted frame__, block brick__.

INTERVIEWER_____DATE_____.
(Name or initials)

II. HOUSEHOLD COMPOSITION Schedule No._____

Table 1.--Please give information about all members of your household who were part of your family (sleeping and eating) during the last three months (Since June, 1961). DO NOT INCLUDE anyone who was merely a visitor.

(a) Persons in household by Relationship to Head	(b) Sex		(c) Age Last Birthday	(d) Marital Status 1/	(e) Years of Education *	(f) Availability for Work	(g) Kind of work July 1, 1966 (Job Description)	(h) Code	(i) 1966 Employment	
	M	F							Self	Others
1. Head										
2. Homemaker										
Children & others 3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.										
14.										
15.										
16.										
17.										

*Highest grade of school completed.

1/See page 3 for codes for 1/, 2/, and 3/.

Schedule No._____

CODE FOR TABLE 1; also TABLE 2, p. 4, items 1 and 4.

1/ Code for Marital Status (d):

M Married
NM Never Married
D Divorced
S Separated
W Widowed

2/ Code for Availability for Word (f):

PS Preschool
IS In School
AW Fully Able to Work
TD Totally Disabled
LD Limited Disability
R Earned Retirement
(1) No Disability_____
(2) Disabled_____

3/ Code for Types of Work (h):

0 Housekeeping
1 Farm Operator or Manager
2 Farm Laborer or Foreman
3 Manager, Proprietor (except Farm), Professional and Technical
4 Sales
5 Clerical
6 Craftsman and Foreman
7 Operatives
8 Service Workers
9 Domestic Service
10 Laborer, (except Farm)
11 Unpaid Family Laborer
12 Disabled
13 Retired
14 Unemployed
15 No Answer

III. MIGRATION OF FAMILY MEMBERS (Continued from page 2) Schedule No._____

Table 2.--Now I should like to know something of your children, etc., WHO HAVE MOVED from your home to other places during the last five years (Since June, 1961)

(a) Non-Resident Family Members *	(b) Sex M	(b) Sex F	(c) Age Last Birthday	(d) Year Left Home	(e) Marital Status 1/	(f) Years of Education	(g) Present Place of Residence Full Address City County State	(h) C-C-S Residence 2/	(i) R-U Residence 3/	(j) Job Description or Kind of Work 4/
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										

*By relationship to Head
1/See Code 1, page 4.
4/See Code 3, page 4.

2/Community State Code for Residence (h)
1. This Community
2. Another community, this county
3. Adjoining county
4. Elsewhere in the state
5. Adjoining state
6. Elsewhere in the USA
7. Foreign country
8. Military service
9. Unknown

3/Rural-urban Code for Residence (i)
1. Open country farm
2. Open country non-farm
3. Town (up to 99,999)
4. Cities (100,000 and up)
5. Unknown

Cluster Schedule No._____

IV EMPLOYMENT: (Answer V in all instances.)

INTERVIEWER: If this family was in existence FIVE YEARS OR MORE, ask:

1. In order to enjoy satisfactory living, people sometimes change jobs or move from one place to another. Please think back to five years ago (July, 1961) and tell me:

   (1) What kind of work was your husband doing five years ago?____

   (2) Is your husband doing the same kind of work now that he did in 1961? Yes___, No___, Explain if No_____

   (3) Has your husband, at any time since you were married, enrolled in adult educational courses or vocational training to learn new skills? Yes___, No___, DK___, Explain if yes _____.

   (4) Does he possess any skill he is not now using (carpenter, teacher, etc.)? Yes___, No___, What skill?_____ Why is he not using it?_____

2. TO WIFE: Now please tell me something about yourself.

   (1) Were you employed five years ago for wages or salery? Yes___, No___.

   (2) Please explain change in employment status, if any:_____ _____

   (3) Now I'd like to ask you to recall, if you can, what your family situation was in 1961. Thinking back and comparing your present over-all situation with that of 1961 do you feel that your family is now:

   (a) much better off___, (b) somewhat better off___, (c) about the same___, (d) somewhat worse off___, (e) much worse off__

   Why do you think this?_____

V INCOME

INTERVIEWER: Hold up income card and obtain estimate.

(1)	Under $1,000___	(7)	$6,000-6,999___
(2)	$1,000-1,999___	(8)	$7,000-7,999___
(3)	$2,000-2,999___	(9)	$8,000-8,999___
(4)	$3,000-3,999___	(10)	$10,000 or over___
(5)	$4,000-4,999___	(11)	None ____
(6)	$5,000-5,999___	(12)	Don't know or no answer ____

Place annual income here, if voluntarily given...$_____.

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BIOGRAPHICAL SKETCH

Juan M. Clark was born in Havana, Cuba, on May 16, 1938. He attended school in Havana, graduating from La Salle High School there in June, 1955. He entered the University of Havana but was forced to interrupt his studies due to political turmoil in Cuba.

Before he left Cuba in June, 1960, Mr. Clark occupied the position of National President of the Young Catholic Students Organization, and also a post in the Ministry of Social Welfare. He returned as a paratrooper of the 2506 Brigade to fight in the 1961 abortive Bay of Pigs invasion. He was captured and imprisioned until December, 1962, when he was ransomed with other prisoners of war, freed, and returned to the United States.

Mr. Clark married the former Clara De Leon and has two sons, Juan Marcos, and Jose Alberto. As a Cuban exile in Venezuela, he was Head of Programs in La Guaira Area for the Instituto Venezolano de Accion Communitaria (IVAC), a community development organization.

In June, 1965, Mr. Clark entered the University of Florida and received the Degree of Bachelor of Science in Agriculture in August, 1967. In September, 1967, he enrolled as a graduate student to work toward the Degree of Master of Science in Agriculture, with a major in Agricultural Economics. When a graduate student he worked as research assistant in the Latin American Trade Project (USDA), centered in the Department of Agricultural Economics. He is a member of the national honorary society Omicron Delta Epsilon, the Society for International Development, president of the Latin American Club, and vice-president of the Propellers Club, the University of Florida.

This thesis was prepared under the direction of the chairman of the candidate's supervisory committee and has been approved by all members of that committee. It was submitted to the Dean of the College of Agriculture and to the Graduate Council, and was approved as partial fulfillment of the requirements for the degree of Master of Science in Agriculture.

March, 1969

W. A. Broyles

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